

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A range sensing system comprising~~which includes~~:  
at least one energy source adapted to emit energy capable of reflection by one or more targets within a region, and  
at least one receiver adapted to sense the reflection of emitted energy from said at least one target within said region, and  
an activation system associated with said at least one energy source, said activation system being adapted to activate and deactivate an energy source in a cycle pattern with a selected source frequency, and  
a shielding system associated with said at least one receiver, said shielding system being adapted to block the sensing of reflected energy from a target by a receiver, said shielding system being activated and deactivated in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequencies being selected from different frequency values,  
wherein an output signal of said at least one [a] receiver is compared with a reference signal to determine a range value for a selected target of the receiver, where phase differences between the receiver signal and reference signal indicate a range value.
2. (Original) A range sensing system as claimed in claim 1 adapted to indicate range values for a plurality of targets within a region.
3. (Currently Amended) A range sensing system as claimed in claim 1 ~~or claim 2~~ wherein the source frequency used is phase locked with respect to the receiver frequency used.

4. (Currently Amended) A range sensing system as claimed in claim 1 ~~[[3]]~~ wherein a single signal generator generates a receiver frequency which is phase locked with respect to a source frequency generated by the same signal generator.

5. (Currently Amended) A range sensing system as claimed in claim 2 ~~claims 2 to 4~~ wherein an output signal of a receiver has a frequency equal to the frequency difference between a source frequency and a receiver frequency.

6. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein said at least one energy source is activated and said at least one receiver is shielded using a plurality of paired source and receiver frequencies.

7. (Original) A range sensing system as claimed in claim 6 wherein a receiver is adapted to emit a plurality of output signals in response to the use of said plurality of paired sets of source and received frequencies.

8. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 which includes a single energy source only with a diffuse emission pattern.

9. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein an energy source is formed from a light emitting diode.

10. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein an energy source emits visible light energy.

11. (Original) A range sensing system as claimed in claim 10 wherein a receiver is formed from a light sensitive transducer.

12. (Original) A range sensing system as claimed in claim 11 wherein the receiver is formed from or implemented by a charged coupled device.

13. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the range sensing system includes a single receiver only.

14. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the activation system controls the supply of power to an energy source.

15. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the shielding system is implemented through a physical barrier.

16. (Currently Amended) A range sensing system as claimed in claim 1 ~~claims 1 to 15~~ wherein the shielding system is implemented through an enable signal applied to operate a receiver.

17. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the reference signal is generated by mixing the receiver frequency and the source frequency.

18. (Currently Amended) A range sensing system as claimed in claim 1 ~~claims 1 to 17~~ wherein the reference signal is generated through a calibration procedure.

19. (Currently Amended) A range sensing system as claimed in ~~any previous~~ claim 1 wherein the range sensing system includes a processing means adapted to compare an output signal of the receiver to a reference signal.

20. (Original) A range sensing system as claimed in claim 19 wherein the processing means is a computer system.

21. (Currently Amended) A method of calculating a range to a target within a region, comprising~~characterised by the steps of:~~

- (i) activating an energy source using an activation system, said energy source being activated and deactivated in a cyclic pattern with a selected source frequency, and
- (ii) operating a receiver using a shielding system, said shielding system being adapted to block the sensing of reflected energy from a target in a cyclic pattern with a selected receiver frequency, said source frequency and receiver frequency being selected from different frequency values, and
- (iii) comparing a receiver output signal with a reference signal to determine a range value for said target, where phase differences between the receiver output signal and reference signal indicate a range value.

22. (Original) A method of calculating a range to a target within a region as claimed in claim 21 wherein the energy source is activated and the receiver is shielded using a plurality of paired source and receiver frequencies.

23. Cancelled.

24. Cancelled.